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ABSTRACT

In two succeeding years, 1974 and 1975, the same attitude questionnaire is given to students in succeeding grades to determine attitude change as they move from third to fourth grade or from sixth to seventh grade. Rather than reporting on each of thirty-five attitude items separately, a statistical technique is applied to select the most significant clusters of attitudes at each grade level. These factors are reported as single scores for each student, reflecting the number of items which are answered in a manner indicating positive attitude. Change in student attitudes between grades is reported by looking at the difference between the attitude score in the later grade and the score in the earlier grade. The effects of race, sex, and building assignment, as well as the effect of class room organization (not only for third and fourth grade group) are reported for each factor. Results indicate that, among early elementary students, attitudes toward school are the strongest factor in student attitudes. At the elementary level, attitudes toward math emerge as the strongest cluster of student attitudes, with racial attitudes and attitudes toward reading and toward school following. An important conclusion is that building assignment plays a role in how students feel about themselves, other students, their school life, and school work. (Author/AM)

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PANEL STUDY OF ATTITUDES:

GRADE 3 TO GRADE 4

AND

GRADE 6 TO GRADE 7

August 25, 1975

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Submitted by: The Department of Research and Evaluation

The School District of the City of Pontiac

In two succeeding years, 1974 and 1975, the same attitude questionnaire was given to students in succeeding grades in early and late elementary schools. This makes it possible to determine attitude change in individual students as they moved from third to fourth grade or from sixth to seventh grade.

Rather than reporting on each of thirty-five attitude items separately, a statistical technique was applied to select out the most significant clusters of attitudes at each grade level. These factors (clusters of related attitude items) are then reported as single scores for each student. The scores reflect the number of items which students answered in a manner indicating positive attitude. Higher scores then, represent more favorable attitudes on each dimension.

Change in student attitudes between grades is reported by looking at the difference between their attitude score in the later grade and their score in the earlier grade. If the difference is positive, attitudes have become more favorable; if the difference is negative, attitudes are less favorable. The effects of student race, sex, and building assignment on attitude change are also reported for each factor. Additionally, in the 3rd and 4th grade group, the effect of classroom organization is reported, i.e. whether students are in self-contained classrooms, learning centers or are regrouped for reading and math.

Results: Early Elementary, Grade 3 to Grade 4

Among early elementary students, attitudes toward school are the strongest factor in student attitudes. Attitudes toward math, student self-concept, and attitudes toward reading also are important clusters of student attitudes. Racial attitudes do not emerge as a separate factor for early elementary students.

Race of the student does not have a significant effect on attitude change at this level; sex is significant only in the case of reading attitudes, in which girls gain more than boys. Classroom organization for reading has an effect on reading

attitudes: students in self-contained reading classes become significantly more positive toward reading than do those in re-grouped classes. Students in learning centers for both reading and math appear to become the most positive in math and reading attitudes. However, there are so few students in learning centers that strong conclusions cannot be drawn from these results.

In early as well as late elementary, building effect is strong. To some extent, for three of the four major factors, student attitude is determined by which building they attend. Student self-concept, attitudes toward school and attitudes toward reading are affected.

Generally, attitudes toward school and student self-concept declined as students moved from third to fourth grade: attitude toward math improved and attitudes toward reading remained essentially unchanged.

Late Elementary Level: Grade 6 and Grade 7

At this level, attitudes toward math emerge as the strongest cluster of student attitudes. Interestingly, it is the absence of negative attitudes toward math, rather than positive attitudes toward it, which mainly constitute this factor.

Racial attitudes are the second strongest factor, followed by attitudes toward reading and attitudes toward school. It is noteworthy that in the later grades attitude toward school in general becomes less important. Students in late elementary schools seem to relate more to specific aspects of learning experience than to school in general. One of these specific aspect involves racial attitudes.

Again unlike the early grades, race of student has a significant effect on all the above factors except attitude toward reading. In all three cases, black students gain more than white in positive attitudes. Sex effects are greater at this level, with females becoming more positive in racial attitudes and males more negative toward math.

As in early elementary grades, building effects are important. Jefferson students become significantly more negative toward math than Madison students. On the other hand, Jefferson students account for most of the change in a positive direction in attitudes toward school and in racial attitudes.

Generally, change in attitudes toward school is in a positive direction between grades 6 and 7, and is slightly more positive for racial attitudes and attitudes toward reading. Attitudes toward math become more negative.

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An important conclusion of this study is that building assignment plays a role in how students feel about themselves, other students, their school life and school work. Building discussions about orientation, personnel and practices in the building, in relation to these findings, may prove useful in enhancing learning conditions in the district.

Panel Analysis: Grades Three and Four

Since the same instrument was administered to students in grades three and four, it is possible to match the responses of children over two school years. Therefore, in addition to presenting the distributions of attitudes at the end of grade four, we are able to examine the pattern of change among the attitudes of early elementary students. All items were recoded so that positive attitudes were scored "1" and negative responses were coded "0".

In order to simplify the presentation of these data, a factor analysis using VARIMAX rotation was performed on the student's responses in grade three. Ten factors emerged from the thirty-five attitude items; four of these factors had an eigenvalue greater than 1 and these clusters explain 71.2 percent of the variance in the set of attitude items. A brief description of the principal factors will be followed by a discussion of the change in these attitudes between grades three and four.

School Attitudes

The first factor to emerge (explaining 31.7 percent of the variance) had the highest loadings on the following items:

1.	I really like school.	(.578)
2.	I am usually happy at school.	(.520)
3.	Teachers treat kids fairly at this school.	(.468)
4.	Wish to go to a different school.*	(.460)
5.	School is a safe place to be.	(.438)

* Reverse coding used with this item.

These items constitute a school attitude cluster. A Likert-type score was computed for respondents in grade three and in grade four. The distributions of these scores are presented in Table 1 . The range for both years is "0" (no positive responses to the school attitude items) to "5" (all positive responses).

Those who did not answer any of the questions were coded "8". In grade three, 5.8 percent were missing data; in grade four, a score could not be computed for 7.5 percent of the cases. We see that students in grade three are more positive ($\bar{x}$ = 3.96, S.D. = 1.27) toward school than students in grade four ($\bar{x}$ = 3.42, S.D. = 1.49) on the average.

However, our interest here is individual change not group change. Therefore, for each student we computed the difference between his score in grade four and his score in grade three. The distribution of these differences are presented in Table 1A. Students became slightly less positive in their attitudes toward school between grade three and grade four ($\bar{x}$ = -.55, S.D. = 1.68). The remainder of this section will examine this difference among various categories of students.

School Attitudes and Race

Change in positiveness toward the school was examined in each of three racial subgroups: whites, blacks, and Latinos and others. The results of this comparison appear below.

RACIAL GROUP	N	MEAN CHANGE SCORE	S.D.
Whites	481	-.62	1.65
Blacks	402	-.45	1.75
Others	67	-.75	1.58

Black students seemed to change least in their degree of positiveness ($\bar{x}$ = -.45); whites become more disenchanted ($\bar{x}$ = -.62); and students in the residual category changed most in a negative direction ($\bar{x}$ = -.75). An analysis of variance fails to achieve a significant F for these differences. Therefore, although there is a tendency for white students to become less positive than black students, there are no significant racial differences in school attitude change. The racial

identification of the student does not explain the decline in positiveness toward school between grade three and grade four.

School Attitudes and Sex

Male and female students were compared to determine if the sex of the student was a factor in the decrease in positiveness. We see below that males are slightly less positive in grade four than females. However, these differences are once again not significant. In general, boys are likely to become as

SEX	N	N	MEAN CHANGE SCORE	S.D.
Males	453		- .59	1.79
Females	499		- .52	1.59

negative as girls between grade three and grade four.

School Attitudes and Classroom Organization

Math Classes: Math and reading classrooms are organized in three ways: self-contained, re-grouped and learning center. No significant difference appears in the school attitudes of children in various math sections.

MATH CLASS ORGANIZATION	N	MEAN CHANGE SCORE	S.D.
Self-contained	484	- .68	1.68
Re-grouped	150	- .47	1.67
Learning Center	22	- .09	1.31

Those students in self-contained classrooms became most negative toward school between third and fourth grade; those in re-grouped classrooms became slightly less negative; those in learning center show almost no change but they are few in number. Method of classroom organization doesn't significantly influence positiveness toward school in grades three and four.

Reading Classes: Likewise method of reading organization seems to have little to do with positive school attitudes. There is even less difference in change scores among students in the three reading groups than among students in the math groups.

READING CLASS ORGANIZATION	N	MEAN CHANGE SCORE	S.D.
Self-contained	316	- .59	1.70
Re-grouped	553	- .53	1.67
Learning Center	18	- .44	1.34

Method of classroom organization in reading or math does not seem to alter the general decline in positiveness toward school which occurs between grades three and four.

School Attitudes and Buildings

Students in different buildings display considerable range in change scores in attitudes toward school. Students at Malkim School became more positive (+.34); Bagley students remain unchanged (-.07); all other buildings became strongly negative, with Whitman (-1.33) and Bethune (-1.06) showing the strongest change.

BUILDING	N	MEAN CHANGE SCORE	S.D.
Malkim	101	+ .34	1.61
Bagley	94	- .07	1.61
Wever	103	- .41	1.59
LeBaron	25	- .52	1.85
Crofoot	90	- .52	1.49
Whitfield	79	- .58	1.49
WHRC	163	- .59	1.68
Rogers	108	- .72	1.58
Bethune	86	- 1.06	1.75
Whitman	108	- 1.33	1.73

The building in which students spend grade four seems to make considerable difference in terms of the level of positiveness which students display toward school. ($F_{(9,948)} = 8.43$, $p < .001$).

School Attitudes: Summary

Students become less positive toward school between grades three and four. Whites and those in self-contained math classes display greater change in the negative direction. But building seems a very strong factor in decreasing positiveness toward school

Math Attitudes

The second factor which emerged (explaining 19.3 percent of the variance) had the highest loadings on these items:

1.	Math is a hard subject to understand.*	(.527)
2.	Math is one of my worst subjects.*	(.498)
3.	Learning about math is fun.	(.389)
4.	Most students in my class are better in math than I am.*	(.342)
5.	I do good work in math.	(.331)

*Reverse coding used with this item.

These items constitute a math attitude cluster and an index of math attitudes was constructed by summing poritive response to these items. Table 2 presents the distributions of these scores for grades three and four. Students in Grade 4 ($\bar{x}$ = 3.60, S.D. = 1.29) are in general more favorable to learning math than students in Grade 3 ($\bar{x}$ = 3.27, S.D. = 1.32). This is also reflected in individual differences. The average difference between a student's math attitude score in grade three and his score in grade four is positive ($\bar{x}$ = .34, S.D. = 1.53). In grade four, students are more positive about learning math.

Math Attitudes and Race

Students of all racial groups showed an increase in positiveness toward learning math. As we see below, whites become slightly more positive than blacks, although both these groups changed less than students in the residual category.

RACIAL GROUP	N	MEAN CHANGE SCORE	S.D.
White	484	+.41	1.55
Black	412	+.33	1.58
Other	69	+.52	1.37

An analysis of variance fails to yield a significant result. Therefore, race does not seem to significantly affect the increased positiveness between racial subgroups.

Math Attitudes and Sex

Girls become slightly more positive about math from grade three to grade four than do boys although this difference is not statistically significant.

SEX	N	MEAN CHANGE SCORE	S.D.
Males	459	+ .35	1.59
Females	508	+ .41	1.51

Math Attitudes and Classroom Organization

Math classes: The method by which math classes are organized seems to influence the positiveness of students toward learning math. Students in re-grouped settings are slightly more positive than those in self-contained classes but both are less positive than learning center students. Although there are only twenty-one in math learning centers, these students become significantly more positive than their cohorts in other classes.

MATH CLASS ORGANIZATION	N	MEAN CHANGE SCORE	S.D.
Self-contained	490	+ .20	1.56
Re-grouped	156	+ .29	1.43
Learning Center	21	+1.05	1.36

Reading Classes: Not surprisingly, reading class organization is not significantly related to change in attitudes about learning math. Again, Learning Center students become more positive than those in either self-contained or re-grouped settings but the difference, with so small a number, isn't sufficient for statistical significance.

READING CLASS ORGANIZATION	N	MEAN CHANGE SCORE	S.D.
Self-contained	322	+ .24	1.54
Re-grouped	559	+ .31	1.57
Learning Center	18	+ .78	1.47

Math Attitudes and Building

Students in different buildings display a range in their responses to learning math. Students at WHRC demonstrate the greatest level of increased positive math attitudes; those at Rogers the least change. In general, the level of increased positiveness toward learning math varies by the building in which the student resides. These differences are statistically significant. ($F_{(9,954)} = 3.78$ $p < .01$).

BUILDING	N	MEAN CHANGE SCORE	S.D.
WHRC	168	+ .71	1.56
LeBaron	24	+ .58	1.89
Malkim	100	+.53	1.50
Whitfield	78	+ .53	1.34
Crofoot	90	+ .42	1.52
Wever	105	+ .35	1.56
Bethune	88	+ .19	1.53
Bagley	96	+ .11	1.48
Whitman	110	+ .04	1.63
Rogers	110	- .08	1.48

Math Attitudes: Summary

Students become more positive toward math between grades three and four. The organization of math classrooms is related to positiveness toward learning math with the largest increase in positiveness occurring among Learning Center Students. Building differences are not as strong as they are in other areas of student attitudes.

Self-Concept

The third strongest factor (explaining 10.8 percent of the variance) included the following self-concept items:

1. My classmates think I have good ideas. (.572)
2. I have good ideas. (.527)
3. I can give a good report in class. (.374)
4. I do good work in math. (.372)
5. I am an important member of my class. (.366)

A self-concept index was constructed for students in both grades (see Table 3). Average self-concept declined slightly from grade three ($\bar{x} = 3.59$, S.D. = 1.33) to grade four ($\bar{x} = 3.43$, S.D. = 1.39). Likewise the direction of change in self-concept is on the average negative for individuals ($\bar{x} = -.15$, S.D. = 1.57).

Self-Concept and Race

The self-concepts of students in all racial groups declined from grade three to grade four. Below we see that white self-concept declined most, followed by self-concept among blacks. The least decline in positive self-concept was experienced by students in the residual racial category. However, the difference among these racial groups aren't statistically significant.

RACIAL GROUP	N	MEAN CHANGE SCORE	S.D.
Whites	480	- .20	1.65
Blacks	405	- .14	1.50
Other	70	- .06	1.87

Self-Concept and Sex

Very little difference appears between the change in self-concepts of boys and girls. Students of both sex experience about the same decline in their self-concepts.

SEX	N	MEAN CHANGE SCORE	S.D.
Males	455	-.15	1.50
Females	502	-.18	1.69

Self-concept and Classroom Organization

Math Classes: No significant differences in self-concept appear among students in different math classes. Those in self-contained classes experience the lowest decrease in self-concept and those in Learning Center the highest. This pattern may reflect a stigma which is attached to Learning Centers. However, the differences among these groups are too small to be statistically significant.

MATH CLASS ORGANIZATION	N	MEAN CHANGE SCORE	S.D.
Self-contained	185	- .11	1.54
Re-grouped	155	- .31	1.59
Learning Center	21	- .52	1.97

Reading Classes: Although again differences are not statistically significant, students who attend Learning Center for reading experience show an increase in positive self-concept. This represents a reversal of the pattern with math classes. However, in general, in self-contained and re-grouped classes, students experience a slight decline in self-concept between grades three and four.

READING CLASS ORGANIZATION	N	MEAN CHANGE SCORE	S.D.
Self-contained	318	- .12	1.67
Re-grouped	556	- .14	1.57
Learning Center	18	+ .11	1.37

Self-Concept and Building

Once again the building in which a student is located makes a difference in change in student self-concept between grades three and four ($F(9,954) = 6.34$, $p < .01$). In some buildings, student self-concept improves markedly (Whitfield, WHRC, LeBaron) while in others there is a decline (Bagley, Bethune, Malkim, Rogers, and Whitman). Therefore, where a student is located seems to determine the direction of the change in his self-concept.

Building	N	Mean Change Score	S.D.
Whitfield	79	+ .41	1.49
WHRC	170	+ .35	1.56
LeBaron	25	+ .32	1.82
Wever	104	.00	1.73
Crofoot	91	- .20	1.46
Bethune	87	- .24	1.38
Bagley	95	- .44	1.54
Whitman	108	- .46	1.63
Rogers	105	- .56	1.59
Malkim	99	- .66	1.52

Self-Concept: Summary

Students in grade four experience a slight loss in self-concept from grade three. However, this loss is mitigated under certain learning conditions, especially building.

Reading Attitudes

The final major cluster which emerged from the factor analysis of the thirty-five elementary attitude items (explaining 9.3 percent of the variance) displayed high loadings on the following items:

1.	It is hard to learn to read. *	(.600)
2.	Reading is one of my worst subjects.*	(.570)
3.	Most students in my class are better in reading than I am. *	(.374)
4.	I forget what I learn.*	(.340)
5.	I do good work in reading.	(.253)

* Reverse coding was used with this item.

These items were used to construct an index of reading attitudes. The average scores on this index were slightly higher in grade four ($\bar{x}$ = 3.71, S.D. = 1.24) than in grade three ($\bar{x}$ = 3.63, S.D. = 1.31). In all, there was only a very slight improvement ($\bar{x}$ = +.08, S.D. = 1.43) in reading attitudes from grade three to grade four (See Table 4 and 4A).

Reading Attitudes and Race

The race of a student makes little difference in his change in reading attitude. Students of all races remain essentially the same from grade three to grade four.

RACIAL GROUP	N	MEAN CHANGE SCORE	S.D.
White	482	+ .08	1.41
Black	402	+ .10	1.41
Other	70	+ .06	1.61

Reading Attitudes and Sex

What change occurs between third and fourth grades in reading attitudes occurs for females. While males remain the same, females become significantly more positive about reading. ($F(1,954) = 3.93$, $p < .05$).

SEX	N	MEAN CHANGE SCORE	S.D.
Males	455	- .01	1.49
Females	501	+ .17	1.36

Reading Attitudes and Classroom Organization

Math Classes. Reading attitudes do not vary significantly by method of math classroom organization. Students in re-grouped math do experience slightly more improvement in reading attitudes than do students in other sections. However this difference is not statistically significant.

MATH ORGANIZATION	N	MEAN CHANGE SCORE	S.D.
Self-contained	486	+.07	1.48
Re-grouped	155	+.21	1.38
Learning Center	21	+.05	1.12

Reading Classes. Method of reading organization makes a significant difference in change in reading attitudes between grades three and four. Students in self-contained units experience an increase in positiveness toward reading whereas those in re-grouped units remain substantially the same. Reading organization does influence attitudes toward learning to read ($F(2,889) = 5.76$, $p < .01$).

READING ORGANIZATION	N	MEAN CHANGE SCORE	S.D.
Self-contained	318	+ .30	1.42
Re-grouped	556	- .02	1.45
Learning Center	16	+ .50	1.10

Reading Attitudes and Building

For reading attitudes, unlike other attitude clusters in grade four, building does not seem to be a significant variable. Although students in various buildings exhibit a wide range of reading attitude change scores, building differences are not statistically significant.

BUILDING	N	MEAN CHANGE SCORE	S.D.
Wever	102	+ .56	1.31
LaBaron	24	+ .29	1.63
Crofoot	90	+ .10	1.34
WHRC	166	+ .10	1.66
Whitfield	78	+ .09	1.11
Bethune	86	+ .07	1.28
Whitman	107	+ .05	1.53
Malkin	102	- .05	1.20
Bagley	96	- .06	1.62
Rogers	110	- .14	1.35

Reading Attitudes: Summary

In general, for all students, there seems to be little movement in reading attitudes. But for some subgroups, significant change does occur. Females and those in self-contained reading classrooms experience significant positive gains in reading attitudes.

TABLE 1

A. SCHOOL ATTITUDE SCORES: GRADE THREE

SCORE	FREQUENCY	PERCENT
0	14	1.3%
1	57	5.2
2	83	7.6
3	128	11.7
4	262	23.9
5	487	44.5
8	63	5.8
TOTAL	1094	100.0%

MEAN = 3.96 S.D. = 1.27

B. SCHOOL ATTITUDE SCORES: GRADE FOUR

SCORE	FREQUENCY	PERCENT
0	47	4.3%
1	93	8.5
2	125	11.4
3	182	16.6
4	246	22.5
5	319	29.2
8	82	7.5
TOTAL	1094	100.0%

MEAN = 3.42 S.D. = 1.49

TABLE 1A

C. DIFFERENCES IN SCHOOL ATTITUDES BETWEEN GRADE 3 AND GRADE 4

SCORE	FREQUENCY	PERCENT
-5	12	1.1%
-4	44	4.0
-3	66	6.0
-2	127	11.6
-1	185	16.9
0	313	28.6
1	118	10.8
2	62	5.7
3	22	2.0
4	8	.7
5	1	.1
8	136	12.4
TOTAL	1094	100.0%

MEAN = -.55 S.D. = 1.68

TABLE 2

A. MATH ATTITUDE SCORES: GRADE THREE

SCORE	FREQUENCY	PERCENT
0	27	2.5%
1	83	7.6
2	176	16.1
3	261	23.9
4	273	25.0
5	216	19.7
8	58	5.3
TOTAL	1094	100.0%

MEAN = 3.27 S.D. = 1.32

B. MATH ATTITUDE SCORES: GRADE FOUR

SCORE	FREQUENCY	PERCENT
0	18	1.6%
1	65	5.9
2	127	11.6
3	186	17.0
4	324	29.6
5	301	27.5
8	73	6.7
TOTAL	1094	100.0%

MEAN = 3.60 S.D. = 1.29

TABLE 2A

C. DIFFERENCES IN MATH ATTITUDES BETWEEN GRADE 3 AND GRADE 4

SCORE	FREQUENCY	PERCENT
-5	1	.1%
-4	8	.7
-3	30	2.7
-2	61	5.6
-1	147	13.4
0	293	26.8
1	229	20.9
2	126	11.5
3	56	5.1
4	13	1.2
5	5	.5
8	125	11.4
TOTAL	1094	100.0%

MEAN = +.34 S.D. = 1.53

TABLE 3

A. SELF-CONCEPT SCORES: GRADE THREE

SCORE	FREQUENCY	PERCENT
0	24	2.2%
1	67	6.1
2	118	10.8
3	219	20.0
4	277	25.3
5	330	30.2
8	59	5.4
TOTAL	1094	100.0%

MEAN = 3.59 S.D. = 1.33

B. SELF-CONCEPT SCORES: GRADE FOUR

SCORE	FREQUENCY	PERCENT
0	37	3.4%
1	72	6.6
2	142	13.0
3	204	18.6
4	285	26.1
5	276	25.2
8	78	7.1
TOTAL	1094	100.0%

MEAN = 3.43 S.D. = 1.39

TABLE 3A

C. DIFFERENCES IN SELF-CONCEPT BETWEEN GRADE 3 and GRADE 4

SCORE	FREQUENCY	PERCENT
-5	3	.3%
-4	17	1.6
-3	42	3.8
-2	111	10.1
-1	209	19.1
0	281	25.7
1	164	15.0
2	92	8.4
3	30	2.7
4	13	1.2
5	1	.1
8	131	12.0
TOTAL	1094	100.0%

MEAN = -.15 S.D. = 1.57

TABLE 4

A. READING ATTITUDE SCORES: GRADE THREE

SCORE	FREQUENCY	PERCENT
0	21	1.9%
1	62	5.7
2	120	11.0
3	199	18.2
4	299	27.3
5	328	30.0
8	65	5.9
TOTAL	1094	100.0%

MEAN = 3.63 S.D. = 1.31

B. READING ATTITUDE SCORES:

SCORE	FREQUENCY	PERCENT
0	15	1.4%
1	44	4.0
2	127	11.6
3	183	16.7
4	324	29.6
5	329	30.1
8	72	6.6
TOTAL	1094	100.0%

MEAN = 3.71 S.D. = 1.24

TABLE 4A

C. DIFFERENCES IN READING ATTITUDE SCORES BETWEEN GRADE 3 AND GRADE 4

SCORE	FREQUENCY	PERCENT
-5	1	.1%
-4	10	.9
-3	25	2.3
-2	74	6.8
-1	190	17.4
0	317	29.0
1	211	19.3
2	87	8.0
3	36	3.3
4	10	.9
5	1	.1
8	132	12.1
TOTAL	1094	100.0%

MEAN = .08 S.D. = 1.43

Panel Analysis: Grades Six and Seven

Later elementary school students were given the same attitude instrument for two consecutive years. Therefore it is possible to compare the responses of students in grade six last year with their responses to the same items a year later, in grade seven. In other words, we are able to observe the attitude change in individual students as they move from middle school to junior high.

All items were recoded so that positive responses were scored "1" and negative responses coded "0". Factor analysis was used as an exploratory device in order to facilitate summary of the data. The student responses in grade six were factor analyzed and subjected to a VARIMAX rotation. After rotation, the thirty-five variables yielded nine factors, four of which had eigenvalues greater than 1.0. These four factors explained about three-fourths (74.0 percent) of the variance. In each section, a brief description of the major factor will be followed by a discussion of the change in the attitudes between grades six and seven.

Math Attitudes

A factor containing high loadings on questions measuring math attitudes was the first to emerge(explaining 31.9 percent of the variance). The items with the highest loadings on this factor were.

1.	Math is a hard subject to understand.*	(.604)
2.	Math is one of my worst subjects.*	(.581)
3.	I do good work in math.	(.496)
4.	Most students in my class are better in math than I am.*	(.408)
5.	Learning about math is fun.	(.395)

* Reverse coding used with this item.

This factor clearly measures attitudes toward learning math but stronger loadings appear on items measuring the absence of negative attitudes than in those measuring the presence of positive attitudes. This may indicate that in grade six, learning

about math is viewed as not being in academic 'hot water' in math rather than as a positive achievement.

These five items were used to construct a Likert-type index of math attitudes for students in grade six and in grade seven. The distributions of these indices are displayed in Table 1. This index was not able to be computed for eight percent of students in grade six and even less (6.2 percent) in grade seven. Students in sixth grade ($\bar{x}$ = 3.72; S.D. = 1.37) were slightly more positive about math than they were a year later ($\bar{x}$ = 3.72; S.D. = 1.57). This difference is reflected in the direction of the average change of individual students ($\bar{x}$ = -.29; S.D. = 1.49). In general then, in grade seven, students are less positive about math than they were in grade six. The remainder of this section will explain changes in math attitudes among various student sub-groups.

Math Attitudes and Race

Change in attitude toward math was examined by student race. This comparison revealed a significant difference in changes among the three racial sub-groups.

RACIAL	N	MEAN CHANGE SCORE	S.D.
Whites	430	- .43	1.50
Blacks	383	- .18	1.45
Others	46	0.00	1.53

An analysis of variance indicates that the differences among these groups is statistically significant ($F_{(2,856)} = 3.79$, $P < .02$). The decline in positiveness toward learning math depends upon the race of the student. White students experience the greatest degree of disaffection with math; blacks decline much less in positiveness and others stay the same in grade seven as they were in grade six.

Math Attitudes and Sex

Males become more negative toward learning math than do females between middle school and junior high. The difference between sex groups is statistically

significant ($F_{(1,860)} = 3.86$, $P < .05$). Therefore, decrease in positiveness

SEX	N	MEAN CHANGE SCORE	S.D.
Males	458	-.38	1.50
Females	404	-.19	1.46

toward math is more likely to occur for males than for females.

Math Attitudes and Building

Comparison between students in the two junior high schools reveals a significant difference in the change in positiveness toward math ($F_{(1,864)} = 6.43$, $P < .05$). Students at Jefferson have become significantly less positive than students at Madison Junior High.

BUILDING	N	MEAN CHANGE SCORE	S.D.
Jefferson	338	- .45	1.43
Madison	528	- .19	1.51

Math Attitudes: Summary

Students in grade seven are less positive about learning math than they were in grade six. Whites, males and students at Jefferson Junior High have become significantly less positive during the last year than those in comparison groups.

Racial Attitudes

The second factor to emerge (explaining 19.4 percent of the variance) displayed the highest loadings on items measuring racial attitudes:

1. Do children of different races or colors get along at this school? (Ans; Yes) (.736)
2. Are black and white students friendly to one another at this school? (Ans: Yes) (.698)
3. It is a good idea for black and white children to go to school together. (.502)
4. Are the children in your school friendly to you? (Ans: Yes) (.332)

When these four items are combined in a Likert-type index, racial attitudes in grade six can be compared to racial attitudes in grade seven. In general, racial attitudes become slightly more positive ($\bar{x}_6$= 2.90; S.D.$_6$= 1.29: $\bar{x}_7$ = 2.95;S.D.$_7$=1.27). When individual scores in grade seven are subtracted from grade six scores, there is a slight positive average change ($\bar{x}$ =+.05; S.D. = 1.42). (See Table2).

Racial Attitudes and Race

Black students in seventh grade have become significantly more positive in their racial attitudes whereas whites and others remained essentially unchanged. An ANOVA procedure yields and ($F_{(2,824)}$ = 4.88, P<.01). Black seventh graders have substantially increased in positiveness in racial attitudes.

RACIAL GROUP	N	MEAN CHANGE SCORE	S.D.
Whites	414	- .09	1.49
Blacks	364	+ .23	1.36
Other	49	- .06	1.98

Racial Attitudes and Sex

There is also a significant difference between males and females in terms of change in racial attitudes. Females become significantly more positive in their outlook than do males ($F_{(1,828)} = 4.25$, $P < .05$). Males seem to remain at about the same level as they were in grade six.

SEX	N	MEAN CHANGE SCORE	S.D.
Males	443	- .04	1.48
Females	387	+ .16	1.35

Racial Attitudes and Building

A significant difference appears between students at Jefferson and Madison Junior High schools in change in racial attitudes. Seventh graders at Jefferson became more positive while Madison seventh grades experience little change ($F_{(1,832)} = 11.88$, $p < .01$).

BUILDING	N	MEAN CHANGE SCORE	S.D.
Jefferson	330	+ .26	1.40
Madison	504	- .08	1.41

Racial Attitudes: Summary

In general, racial attitudes become only slightly more positive from grade six to grade seven. However, this slight difference in the total masks marked changes among some sub-groups. Blacks, females, and Jefferson students become significantly more positive. Classroom organization does not seem to make a difference in racial attitudes.

Reading Attitudes:

The third most important factor among sixth grade student responses (explaining 12.2 percent of the variance) contained high loadings on items measuring reading attitudes.

1.	Reading is one of my worst subjects.*	(.580)
2.	Learning to read is fun.	(.469)
3.	I do good work in reading.	(.462)
4.	It is hard to learn to read.*	(.388)

*Reverse coding used with this item.

These items yield reading attitude indices for grades six and seven which are displayed in Table 3 . There is only the slightest increase in positiveness from grade six ($\bar{X}$ = 3.39, S.D. = .93) to grade seven ($\bar{X}$ = 3.34, S.D. = .99) The mean difference for individuals is+.06 (S.D. = 1.07).

Reading Attitudes and Race

Although whites become slightly less positive toward reading in grade seven, they are not significantly different from blacks. Race seems not to be related to positiveness toward reading.

RACIAL GROUP	N	MEAN CHANGE SCORE	S.D.
Whites	434	- .12	1.15
Blacks	378	+ .02	.98
Other	49	- .14	.98

Reading Attitudes and Sex

Males become slightly less positive toward reading than females but this difference is not statistically significant.

SEX	N	MEAN CHANGE SCORE	S.D.
Males	458	- .10	1.17
Females	406	- .01	.94

Reading Attitudes and Building

Jefferson seventh graders become slightly more negative about reading than Madison students but this difference is not statistically significant.

BUILDING	N	MEAN CHANGE SCORE	S.D.
Jefferson	337	- .14	1.18
Madison	531	- .01	1.07

Reading Attitudes: Summary

Reading attitudes seem to vary little between grades six and seven. Race, sex and building do not make a difference in changing reading attitudes. Students in re-grouped reading units do seem to increase in positiveness but these constitute only a very small proportion of students in reading.

School Attitudes

Items measuring attitude toward school have the highest loadings on the fourth factor (explaining 10.5 percent of the variance). The items with the highest loadings are:

1. I really like school. (.579)
2. Do you wish you could go to a different school? (Ans: No) (.523)
3. I am usually happy at school. (.517)
4. Is school a safe place to be? (Ans: Yes) (.463)
5. Teachers treat kids fairly at this school. (.461)

On the average scores on the school attitude index are higher in grade seven ($\bar{X}$ - 3.08, S.D. = 1.49) than in grade six ($\bar{X}$ = 2.85, S.D. = 1.60). The average seventh grade increased in positiveness toward school by +.24 (S.D. = 1.75). See Table 4 .

School Attitudes and Race

There are significant differences between students of different races in their change in attitudes toward school ($F_{(2,847)} = 4.17$, $p < .02$). Blacks become

more positive while whites remain substantially the same. The small number (n=48) of students neither black nor white display the greatest amount of positive change.

RACIAL GROUP	N	MEAN CHANGE SCORE	S.D.
Whites	429	+.07	1.72
Blacks	373	+.39	1.78
Other	48	+.56	1.72

School attitudes and sex

There is no significant difference in the patterns of change in school attitudes between males and females.

SEX	N	MEAN CHANGE SCORE	S.D.
Males	453	+.21	1.72
Females	400	+.27	1.78

School Attitudes and Building

Seventh graders at Jefferson Junior High have become significantly more positive about school than students at Madison Junior High ($F(1,855) = 19.241$; $p < .001$). Seventh grade school seems an important variable in increasing positiveness to school.

BUILDING	N	MEAN CHANGE SCORE	S.D.
Jefferson	337	+.57	1.68
Madison	520	+.03	1.77

School Attitudes: Summary

In general, students become considerably more positive about school in seventh grade. Non-whites, students in reading learning center and at Jefferson Junior High School experience the greatest level of positive change.

TABLE 1

A. MATH ATTITUDE SCORES: GRADE SIX

SCORE	FREQUENCY	PERCENT
0	27	2.7%
1	57	5.7
2	91	9.1
3	144	14.4
4	255	25.4
5	348	34.7
8	80	8.0
TOTAL	1002	100.0%

MEAN=3.721 S.D.=1.370

B. MATH ATTITUDE SCORES: GRADE SEVEN

SCORE	FREQUENCY	PERCENT
0	64	6.4%
1	70	7.0
2	126	12.6
3	147	14.7
4	207	20.7
5	326	32.5
8	62	6.2
TOTAL	1002	100.0%

MEAN=3.427 S.D.=1.573

C. MATH ATTITUDE DIFFERENCE: GRADE SIX - GRADE SEVEN

SCORE	FREQUENCY	PERCENT
-5	3	0.3%
-4	21	2.1
-3	44	4.4
-2	98	9.8
-1	157	15.7
0	328	32.7
1	130	13.0
2	58	5.8
3	23	2.3
4	4	0.4
8	136	13.6
TOTAL	1002	100.0%

MEAN = -.292 S.D. = 1.488

TABLE 2

A. RACE ATTITUDE SCORES: GRADE SIX

SCORE	FREQUENCY	PERCENT
0	57	5.7%
1	111	11.1
2	133	13.3
3	178	17.8
4	431	43.0
8	92	9.2
TOTAL	1002	100.0%

MEAN=2.896 S.D.=1.289

B. RACE ATTITUDE SCORES: GRADE SEVEN

SCORE	FREQUENCY	PERCENT
0	45	4.5%
1	123	12.3
2	124	12.4
3	163	16.3
4	463	46.2
8	84	8.2
TOTAL	1002	100.0%

MEAN=2.954 S.D.=1.271

C. RACE ATTITUDE DIFFERENCE: GRADE SIX - GRADE SEVEN

SCORE	FREQUENCY	PERCENT
-4	9	0.9%
-3	38	3.8
-2	61	6.1
-1	150	15.0
0	350	34.9
1	123	12.3
2	63	6.3
3	31	3.1
4	9	0.9
8	168	16.8
TOTAL	1002	100.0%

MEAN = + .053 S.D.=1.418

TABLE 3

A. READING ATTITUDES: GRADE SIX

SCORE	FREQUENCY	PERCENT
0	10	1.0%
1	45	4.5
2	93	9.3
3	202	20.2
4	574	57.3
8	78	7.8
TOTAL	1002	100.0%

MEAN = 3.391 S.D. = .929

B. READING ATTITUDES: GRADE SEVEN

SCORE	FREQUENCY	PERCENT
0	16	1.6%
1	50	5.0
2	110	11.0
3	184	18.4
4	581	58.0
8	61	6.1
TOTAL	1002	100.0%

MEAN = 3.343 S.D. = .992

C. READING ATTITUDE DIFFERENCE: GRADE SIX - GRADE SEVEN

SCORE	FREQUENCY	PERCENT
-4	2	0.2%
-3	12	1.2
-2	39	3.9
-1	138	13.8
0	466	46.5
1	134	13.4
2	58	5.8
3	16	1.6
4	3	0.3
8	134	13.4
TOTAL	1002	100.0%

MEAN = +.058 S.D. = 1.068

TABLE 4

A. SCHOOL ATTITUDE: GRADE SIX

SCORE	FREQUENCY	PERCENT
0	91	9.1%
1	123	12.3
2	166	16.6
3	176	17.6
4	185	18.5
5	179	17.9
8	82	8.2
TOTAL	1002	100.0%

MEAN = 2.846 S.D. = 1.601

B. SCHOOL ATTITUDE: GRADE SEVEN

SCORE	FREQUENCY	PERCENT
0	61	6.1%
1	106	10.6
2	142	14.2
3	188	18.8
4	257	25.6
5	175	17.5
8	73	7.3
TOTAL	1002	100.0%

MEAN = 3.075 S.D.=1.492

C. SCHOOL ATTITUDE DIFFERENCE: GRADE SIX - GRADE SEVEN

SCORE	FREQUENCY	PERCENT
-5	4	0.4%
-4	26	2.6
-3	63	6.3
-2	104	10.4
-1	151	15.1
0	236	23.6
1	157	15.7
2	60	6.0
3	39	3.9
4	16	1.6
5	1	0.1
8	145	14.5
TOTAL	1002	100.0%

MEAN =+.244 S.D. = 1.752

POSITIVE ATTITUDES TOWARD SCHOOL IN GRADE 3 AND GRADE 4 BY SCHOOL IN GRADE 3 AND GRADE 4

A. SCHOOL ATTITUDES IN GRADE 3:

THIRD GRADE SCHOOLS			FOURTH GRADE SCHOOLS		
Alcott	3.556	(108)	Bagley	3.515	(103)
Crofoot	4.128	(86)	Crofoot	4.073	(96)
Franklin	4.321	(84)	Whitfield	4.333	(81)
Frost	4.324	(111)	Rogers	4.226	(115)
Herrington	3.636	(107)	Wever	3.720	(107)
LeBaron	4.154	(26)	LeBaron	4.080	(25)
Longfellow	3.436	(101)	Malkim	3.534	(103)
Owen	4.143	(7)	_____		
Twain	3.833	(6)	_____		
Webster	4.466	(88)	Bethune	4.483	(89)
WHRC	3.848	(191)	WHRC	3.842	(196)

B. SCHOOL ATTITUDES IN GRADE 4:

THIRD GRADE SCHOOLS			FOURTH GRADE SCHOOLS		
Alcott	3.350	(103)	Bagley	3.459	(98)
Crofoot	3.563	(87)	Crofoot	3.505	(99)
Franklin	3.800	(80)	Whitfield	3.713	(80)
Frost	3.570	(114)	Rogers	3.513	(117)
Herrington	3.291	(110)	Wever	3.318	(110)
LeBaron	3.577	(26)	LeBaron	3.615	(26)
Longfellow	3.962	(106)	Malkim	3.898	(108)
Owen	2.857	(7)	_____		
Twain	4.000	(5)	_____		
Webster	3.364	(88)	Bethune	3.437	(87)
WHRC	3.227	(172)	WHRC	3.231	(173)

POSITIVE ATTITUDES TOWARD MATH

IN GRADE 3 AND GRADE 4

BY SCHOOL IN GRADE 3

AND GRADE 4

A. MATH ATTITUDES IN GRADE 3:

THIRD GRADE SCHOOLS			FOURTH GRADE SCHOOLS		
Alcott	3.186	(102)	Bagley	3.212	(104)
Crofoot	3.372	(86)	Crofoot	3.323	(96)
Franklin	3.607	(84)	Whitfield	3.580	(81)
Frost	3.214	(112)	Rogers	3.275	(116)
Herrington	3.627	(110)	Wever	3.573	(110)
LeBaron	2.960	(25)	LeBaron	2.958	(24)
Longfellow	3.188	(101)	Malkim	3.176	(102)
Owen	2.429	(7)	_____		
Twain	3.500	(6)	_____		
Webster	3.596	(89)	Bethune	3.556	(90)
WHRC	3.089	(190)	WHRC	3.107	(196)

B. MATH ATTITUDES IN GRADE 4:

THIRD GRADE SCHOOLS			FOURTH GRADE SCHOOLS		
Alcott	3.452	(104)	Bagley	3.414	(99)
Crofoot	3.805	(87)	Crofoot	3.727	(99)
Franklin	4.136	(81)	Whitfield	4.075	(80)
Frost	3.270	(115)	Rogers	3.212	(118)
Herrington	3.826	(109)	Wever	3.881	(109)
LeBaron	3.577	(26)	LeBaron	3.423	(26)
Longfellow	3.736	(106)	Malkim	3.750	(108)
Owen	3.000	(8)	_____		
Twain	3.200	(5)	_____		
Webster	3.761	(88)	Bethune	3.739	(88)
WHRC	3.682	(176)	WHRC	3.753	(178)

POSITIVE SELF CONCEPT IN GRADE 3 AND GRADE 4 BY SCHOOL IN GRADE 3 AND GRADE 4

A. SELF CONCEPT IN GRADE 3:

THIRD GRADE SCHOOLS			FOURTH GRADE SCHOOLS		
Alcott	3.472	(108)	Bagley	3.466	(103)
Crofoot	3.736	(87)	Crofoot	3.612	(98)
Franklin	3.659	(85)	Whitfield	3.671	(82)
Frost	3.704	(108)	Rogers	3.685	(111)
Herrington	3.550	(111)	Wever	3.541	(111)
LeBaron	3.115	(26)	LeBaron	3.280	(25)
Longfellow	3.840	(100)	Malkim	3.853	(102)
Owen	3.571	(7)	_____		
Twain	4.000	(6)	_____		
Webster	3.944	(89)	Bethune	3.933	(90)
WHRC	3.321	(193)	WHRC	3.374	(198)

B. SELF CONCEPT IN GRADE 4:

THIRD GRADE SCHOOLS			FOURTH GRADE SCHOOLS		
Alcott	3.240	(104)	Bagley	3.212	(99)
Crofoot	3.529	(87)	Crofoot	3.404	(99)
Franklin	4.049	(81)	Whitfield	4.113	(80)
Frost	3.052	(115)	Rogers	3.025	(118)
Herrington	3.514	(107)	Wever	3.495	(107)
LeBaron	3.577	(26)	LeBaron	3.654	(26)
Longfellow	3.226	(106)	Malkim	3.187	(107)
Owen	3.375	(8)	_____		
Twain	3.200	(5)	_____		
Webster	3.690	(87)	Bethune	3.678	(87)
WHRC	3.614	(176)	WHRC	3.704	(179)

POSITIVE ATTITUDES TOWARD READING IN GRADE 3 AND GRADE 4 BY SCHOOL IN GRADE 3 AND GRADE 4

A. READING ATTITUDES IN GRADE 3:

THIRD GRADE SCHOOLS			FOURTH GRADE SCHOOLS		
Alcott	3,664	(107)	Bagley	3,689	(103)
Crofoot	3.828	(87)	Crofoot	3,546	(97)
Franklin	4.036	(84)	Whitfield	4,025	(81)
Frost	3.640	(111)	Rogers	3,670	(115)
Harrington	3,463	(108)	Wever	3,439	(107)
LeBaron	3,240	(25)	LeBaron	3,375	(24)
Longfellow	3,843	(102)	Malkim	3,846	(104)
Owen	3.286	(7)	_____		
Twain	2,833	(6)	_____		
Webster	3.818	(88	Bethune	3,876	(89)
WHRC	3.407	(189)	WHRC	3,448	(194)

B. READING ATTITUDES IN GRADE 4:

THIRD GRADE SCHOOLS			FOURTH GRADE SCHOOLS		
Alcott	3.657	(105)	Bagley	3.646	(99)
Crofoot	3.805	(87)	Crofoot	3.646	(99)
Franklin	4.123	(81)	Whitfield	4.125	(80)
Frost	3.496	(117)	Rogers	3,487	(119)
Harrington	4.000	(108)	Wever	3.945	(109)
LeBaron	3.577	(26)	LeBaron	3,692	(26)
Longfellow	3.757	(107)	Malkim	3.778	(108)
Owen	3.250	(8)	_____		
Twain	3.600	(5)	_____		
Webster	3.897	(87)	Bethune	3.966	(87)
WHRC	3.520	(175)	WHRC	3.564	(179)

POSITIVE ATTITUDES TOWARD MATH IN GRADE 6 and GRADE 7 BY SCHOOL IN GRADE 6 and GRADE 7

A. Math Attitudes in Grade 6:

Sixth Grade Schools		Junior High	
		Jefferson	Madison
Bagley	3.816 (76)	3.813 (48)	3.821 (28)
Bethune	3.987 (77)	3.987 (75)	(2)
Malkim	3.444 (87)	(3)	3.500 (84)
McCarroll	3.814 (70)	(8)	3.500 (62)
Rogers	3.616 (86)	(1)	3.647 (85)
Wever	3.739 (69)	(0)	3.739 (69)
Whitfield	3.918 (73)	3.918 (73)	(0)
Whittier	3.618 (55)	3.700 (40)	3.400 (15)
Willis	(1)	(0)	(1)
Wilson	3.570 (107)	(4)	3.583 (103)
Wisner	3.768 (112)	3.768 (82)	3.767 (30)
Whitman	3.694 (108)	3.778 (54)	3.611 (54)

B. Math Attitudes in Grade 7:

Sixth Grade Schools		Junior High	
		Jefferson	Madison
Bagley	3.319 (72)	3.273 (44)	3.393 (28)
Bethune	3.617 (73)	3.620 (71)	(2)
Malkim	3.295 (88)	(4)	3.298 (84)
McCarroll	3.636 (77)	(8)	3.638 (69)
Rogers	3.344 (93)	(1)	3.380 (92)
Wever	3.446 (83)	(3)	3.451 (82)
Whitfield	3.313 (67)	3.313 (67)	(0)
Whittier	3.406 (64)	3.478 (46)	3.222 (18)
Willis	(5)	(0)	(1)
Wilson	3.460 (122)	(2)	3.433 (120)
Wisner	3.291 (103)	3.264 (72)	3.355 (31)
Whitman	3.563 (96)	3.341 (44)	3.750 (52)

POSITIVE ATTITUDES TOWARD RACE IN GRADE 6 AND GRADE 7 BY SCHOOL IN GRADE 6 AND GRADE 7

A. Racial Attitudes in Grade 6:

Sixth Grade Schools		Junior High: Jefferson	Junior High: Madison
Bagley	3.068 (74)	2.891 (46)	3.357 (28)
Bethune	2.750 (76)	2.716 (74)	(2)
Malkim	2.761 (88)	(5)	2.723 (83)
McCarroll	3.159 (69)	(8)	3.230 (61)
Rogers	3.105 (86)	(1)	3.106 (85)
Wever	2.643 (70)	(0)	2.643 (70)
Whitfield	2.811 (74)	2.811 (74)	(0)
Whittier	3.130 (54)	3.051 (34)	3.333 (15)
Willis	(1)	(0)	(1)
Wilson	2.679 (106)	(3)	2.680 (103)
Wisner	3.200 (110)	3.268 (82)	3.000 (28)
Whitman	2.653 (101)	2.647 (51)	2.660 (50)

B. Racial Attitudes in Grade 7:

Sixth Grade Schools		Junior High: Jefferson	Junior High: Madison
Bagley	3.194 (72)	3.409 (44)	2.857 (28)
Bethune	3.096 (73)	3.085 (71)	(2)
Malkim	2.459 (85)	(4)	2.407 (81)
McCarroll	3.147 (75)	(7)	3.103 (68)
Rogers	2.685 (92)	(1)	2.670 (91)
Wever	2.615 (78)	(1)	2.610 (77)
Whitfield	3.103 (68)	3.103 (68)	(0)
Whittier	3.458 (59)	3.478 (46)	3.385 (13)
Willis	(1)	(0)	(1)
Wilson	2.860 (121)	(2)	2.840 (119)
Wisner	3.260 (100)	3.386 (70)	2.967 (30)
Whitman	2.892 (93)	2.881 (42)	2.902 (51)

POSITIVE ATTITUDES TOWARD READING
IN GRADE 6 AND GRADE 7
BY SCHOOL IN GRADE 6 AND GRADE 7

A. Reading Attitudes in Grade 6:

Sixth Grade Schools		Junior High	
		Jefferson	Madison
Bagley	3.316 (76)	3.313 (48)	3.321 (28)
Bethune	3.455 (77)	3.453 (75)	(2)
Malkim	3.427 (89)	3.393 (84)	(5)
McCarroll	3.451 (71)	(8)	3.476 (63)
Rogers	3.302 (86)	3.294 (85)	(1)
Wever	3.319 (69)	(0)	3.319 (69)
Whitfield	3.507 (73)	3.507 (73)	(0)
Whittier	3.093 (54)	3.051 (39)	3.200 (15)
Willis	(1)	(0)	(1)
Wilson	3.450 (109)	(4)	3.457 (105)
Wisner	3.414 (111)	3.427 (82)	3.379 (29)
Whitman	3.421 (107)	3.415 (53)	3.426 (54)

B. Reading Attitudes in Grade 7:

Sixth Grade Schools		Junior High	
		Jefferson	Madison
Bagley	3.389 (72)	3.227 (44)	3.643 (28)
Bethune	3.292 (72)	3.271 (70)	(2)
Malkim	3.135 (89)	(4)	3.129 (85)
McCarroll	3.638 (76)	3.638 (69)	(7)
Rogers	3.312 (93)	3.304 (92)	(1)
Wever	3.500 (82)	(1)	3.494 (81)
Whitfield	3.441 (68)	3.441 (68)	(0)
Whittier	3.079 (63)	3.000 (46)	3.294 (17)
Willis	(1)	(0)	(1)
Wilson	3.390 (123)	(3)	3.375 (120)
Wisner	3.359 (103)	3.278 (72)	3.548 (31)
Whitman	3.245 (98)	3.114 (44)	3.352 (54)

POSITIVE ATTITUDES TOWARD SCHOOL IN GRADE 6 AND GRADE 7 BY SCHOOL IN GRADE 6 AND GRADE 7

A. School Attitudes in Grade 6:

Sixth Grade Schools		Junior High	
		Jefferson	Madison
Bagley	3.227 (75)	3.170 (47)	3.321 (28)
Bethune	2.766 (77)	2.760 (75)	(2)
Malkim	2.851 (87)	(4)	2.843 (83)
McCarroll	3.806 (72)	(8)	3.859 (64)
Rogers	3.205 (83)	(1)	3.244 (82)
Wever	3.085 (71)		3.085 (71)
Whitfield	2.649 (74)	2.649 (74)	(0)
Whittier	3.278 (54)	3.359 (39)	3.067 (15)
Willis	(1)	(0)	(1)
Wilson	7.398 (108)	(4)	2.375 (104)
Wisner	2.649 (111)	2.802 (81)	2.233 (30)
Whitman	2.104 (106)	2.519 (52)	1.704 (54)

B. School Attitudes in Grade 7:

Sixth Grade Schools		Junior High	
		Jefferson	Madison
Bagley	3.451 (71)	3.659 (44)	3.111 (27)
Bethune	3.219 (73)	3.254 (71)	(2)
Malkim	2.636 (88)	(4)	2.619 (84)
McCarroll	3.162 (74)	(7)	3.060 (67)
Rogers	2.763 (93)	(1)	2.739 (92)
Wever	2.913 (80)	(1)	2.899 (79)
Whitfield	3.043 (69)	3.043 (69)	(0)
Whittier	3.377 (61)	3.478 (46)	3.067 (15)
Willis	(1)	(0)	(1)
Wilson	2.992 (123)	(3)	2.967 (120)
Wisner	3.471 (102)	3.603 (73)	3.138 (29)
Whitman	3.011 (93)	3.048 (42)	2.980 (51)